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Midwife and OB/GYN recommendations for parent-infant cosleeping

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Abstract
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Proponents of cosleeping assert that there is research demonstrating support for the benefits of cosleeping. The Attachment (or Natural) Parenting point of view suggests children need skin-to-skin contact throughout the night in order to properly develop attachment and closeness with their mothers. An anthropological perspective illuminates related species' cosleeping patterns and claims cosleeping to be natural for humans in order to enhance closeness and safety.

The opposing side believes that cosleeping may be detrimental. Proponents of this perspective assert that cosleeping has shown to be associated with a higher risk of Sudden Unexpected Infant Deaths (SUIDs). They state that when children sleep in bed with an adult they are at risk of suffocation, entrapment, overlaying, and rebreathing carbon dioxide. Researchers from this perspective suggest that cosleeping may be stressful because cosleeping infants show greater arousals during the night, less deep sleep, and are believed to experience interruptions in their neurological development. The medical community traditionally offers mixed recommendations. Many parents acknowledge utilizing the recommendations of their pediatrician or midwife. In this study, it was found that Midwives are more likely to cosleeping at any age than are OB/GYNs. For children in the age range of 0-6 weeks, 94% of midwives sampled recommended cosleeping. This is significantly different from the 26.7% of OB/GYNs who recommended it. Thus, parents are likely hearing mixed messages about infant sleep practices.

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MIDWIFE AND OB/GYN RECOMMENDATIONS FOR PARENT-INFANT COSLEEPING

A DISSERTATION

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Midwife and OB/GYN Recommendations for Parent-Infant Cosleeping

Cosleeping is portrayed as a controversy in American media today. Recent news articles have reported several deaths due to cosleeping. Reportedly in Bath, Maine, on May 23rd, 2012, a 6-week-old infant was found unresponsive in her parents' bed early in the morning (Brogan, 2012). Although the cause of death is uncertain, the local spokesperson for the Department of Public Safety stated, "unfortunately we lose two to three infants a year because the parents just think they're doing the right thing, but children that young should be in their own crib or bassinet" (Brogan, 2012, para. 5) The city of Milwaukee, Wisconsin reportedly has some of the highest infant mortality rates in the world (Herzog & Stephenson, 2011). This city promoted an anti-cosleeping campaign with provocative images of infants sleeping in adult beds with butcher knives in Fall 2011 in an effort to "stop the most preventable form of infant death" (Herzog & Stephenson, 2011, para. 7). These types of campaigns have shown to be effective in reducing the rates of SIDS (Carpenter et al., 2013). For example, in the Netherlands, an active campaign reduced the rates of cosleeping from 13% in 1999 to 4.6% in 2011. During the same time period, the rates of Sudden Infant Death Syndrome reduced by 25%. As cosleeping becomes more popular in the American culture, it is important to understand what medical professionals are recommending to new parents.

According to Owens (2002), "cosleeping with parents is a controversial topic that has not been thoroughly explored in the literature" (p. 254). The limited research on cosleeping offers compelling and diverse findings. Often these findings contradict one another and occasionally they are based on poor methodology. The authors involved tend to write with passion, as this topic is controversial and is believed to be important for the well-being of future generations of children. If cosleeping is the most common form of sleeping across the world, why are there

some nations who strongly oppose it (McKenna & Mosko, 1993; Owens, 2004)? The existing research points to the potential benefits, as well as dangers, of cosleeping. Cosleeping has been explained in theoretical literature as beneficial to the child's well-being while also being potentially lethal (Willinger, Ko, Hoffman, Kessler, & Corwin, 2003). As the research presents contradictory findings, many parents may be left confused as whether to cosleep or not and in turn may look to their medical provider for answers. Thus, this dissertation reviews the sleep-related recommendations of two medical communities who may have different opinions about cosleeping. This dissertation also offers new data regarding the recommendations of OB/GYNs and Midwives for cosleeping across varied ages of infants and children.

Previous literature reviews have addressed some of the components of cosleeping. Medoff and Schaefer (1993) conducted a review of the advantages and disadvantages of cosleeping. These authors mainly focused on prevalence data and demographic information within the United States. Additionally, their study only included data up through 1992. A more contemporary and well-known review of this literature was completed by McKenna and McDade in 2005. The focus of their review was the connection between breastfeeding, Sudden Infant Death Syndrome (SIDS), and cosleeping. This dissertation adds to the literature by offering a unique compilation of the research. This dissertation is the first to compare two medical professionals' recommendations regarding cosleeping. This research compares nationwide data on the recommendations of midwives and OB/GYNs across different ages of children.

The first main section of this dissertation serves as an introduction and has several subsections. The first subsection outlines the definition of cosleeping. The second subsection presents what is known about the prevalence of cosleeping. The third subsection examines

demographic variables common to parents who cosleep. The fourth subsection discusses the cross-cultural theories of cosleeping and anthropological theories of cosleeping.

The second main section of this dissertation presents arguments for cosleeping (psychologically-related positive impacts), arguments against cosleeping (infant death, sleep patterns, psychologically-related negative impacts), and other related arguments (breastfeeding, transitional object use, and long-term impacts).

The third main section describes the medical recommendations regarding cosleeping. This section includes subsections presenting the published American physician and midwifery recommendations regarding the practice of cosleeping and closely related research. The fourth main portion of this dissertation presents the methodology, data analysis, and results of this study. The final portion of the dissertation discusses implications and limitations of this study, and offers suggestions for future research.

Summary of Existing Literature

Definitions

Cosleeping can be defined as broadly as a child sleeping concurrently in the same room as an adult (Song, 2000). For this dissertation, the definition of cosleeping has been narrowed to include only cosleeping involving bedsharing. To be specific, "cosleeping is…the sharing of any sleep surface with an infant by any other person" (McKenna & Mosko, 1993, p. 31).

Even within the more narrow definition, cosleeping has been described in various ways in the literature. The confusion in defining cosleeping generally revolves around the diversity in the many forms cosleeping can take. General definitions do not help to specify any of the details of cosleeping, such as what the actual practice of cosleeping looks like. For example, in Hong Kong babies often sleep an arm's distance away from their mothers on a hard surface, whereas in New

Zealand cosleeping babies generally sleep on top of the bed covers in between the parents (Ball, 2007).

For most families, the choice to cosleep differs in duration per night, frequency, and motivation for cosleeping (Ball, 2007). Some children sleep in the parental bed every night all night. Some children cosleep one night a week. Other children spend the first half of the night in their own bed, only to wander into their parents' bed in the early hours of the morning. Additional difficulties in defining cosleeping arise when one considers the reasoning for cosleeping. According to Cortesi, Giannotti, Sebastiani, and Vagnoni (2004), "cosleeping has been reported as both a problem arising from, and as a solution to, infant and child sleep problems" (p. 28). Children may sleep in the parental bed for different reasons. For example, children who experience nightmares may spend the night in their parents' bed because they are fearful of sleeping alone. In the household next door, a child may be sleeping in the parental bed due to a lifestyle choice the parents made. In an empirical study conducted by Cortesi et al. in 2004 with 901 healthy school-aged children, 72% of cosleeping children began cosleeping due to problematic bedtime sleep behaviors. Additionally, 8% began cosleeping in order to facilitate night-time breastfeeding, 10% began cosleeping because one of the parents coslept as a child, and 10% began cosleeping for other reasons. In conclusion, while the term cosleeping has historically been used to describe several different varieties of parent-child sleeping, this dissertation refers to cosleeping as a parent and child intentionally sleeping together on the same surface regularly for the entirety of the night.

Prevalence

Cosleeping is a dominant method of sleep in most cultures around the globe (McKenna & Mosko, 1993; Owens, 2004). BaHammam, Alameri, and Hersi (2008) found that 26% of school–

aged children in Saudi Arabia cosleep. Seventy percent of breastfeeding mothers reported cosleeping with their infants in England (Ball, 2007). In Thailand, with a sample of 3692 infants aged 21 days, 60.6% were reported to be cosleeping (Anuntaseree et al., 2008). However, in the United States, the rates are low and have remained so over time. One study in the US found the prevalence of repeated cosleeping for infants 7 months and younger to be 5.5% in 1993 and 12.8% in 2000 (Willinger et al., 2003). While these statistics indicate a large increase in the prevalence of cosleeping over 7 years, they also indicate that cosleeping in America is a relatively rare practice (Willinger et al., 2003). One US study found prevalence rates of cosleeping to be as high as 88% (Weimer et al., 2002); however, this study examined whether children had ever slept in the parental bed without regard for frequency.

In conclusion, it is difficult to determine prevalence rates of cosleeping due to its diverse manifestations. However, it is clear that cosleeping is more commonly practiced worldwide than it is within the United States. Additionally, the data that are available suggest that cosleeping may be gradually occurring more frequently within the United States.

Demographics

Studies have attempted to examine commonalities among families who cosleep (Anuntaseree et al., 2008; Ball, 2007; Lozoff, Askew, & Wolf, 1996; Owens, 2004; Sobralske & Gruber, 2009; Weimer et al., 2002; Willinger et al., 2003). This research indicates that the following factors have a role in the prevalence of cosleeping: single parenthood, socioeconomic status, parent education level, ethnicity, and other factors (i.e., birth order, parental stress level, parent age, family size).

In many countries, cosleeping is correlated with single parenthood. For example, in a survey of 101 caregivers in an urban setting, Weimer et al. (2002) found that families in the United

States who coslept were generally single parent families. Another study found that in Latino families in the United States, cosleeping was found to be more common among single parents (Owens, 2004). However, this correlation is not found in all countries. For example, in England, cosleeping was found to be *less* prevalent among single mothers than two-parent households (Ball, 2007).

The research regarding socioeconomic status and its relationship to cosleeping is mixed. Weimer et al. (2002) found that in the United States cosleeping is more common among persons with a lower socioeconomic status. Additionally, Weimer et al. (2002) found that families in home with two or less rooms dedicated to sleeping were more likely to engage in cosleeping. Lozoff et al. (1996) also found the prevalence of cosleeping to be higher in households with a lower socioeconomic status in the United States. Another study completed among African-American families in Missouri indicated the primary reason for cosleeping was an inability to afford safe cribs for infants (Sobralske & Gruber, 2009). In England, research indicated the opposite. It was found that families who cosleep were more likely to be of upper socioeconomic status (Ball, 2007).

The research on parent education level and cosleeping has resulted in mixed data as well. In the United States, Weimer et al. (2002) found that cosleeping was more likely among families where the parents had a high school education or less. In contrast, in Thailand, correlations have been found between the increased practice of cosleeping and higher parental education (Anuntaseree et al., 2008).

Ethnicity has been shown to have a greater impact on the prevalence of cosleeping than socioeconomic status. Within the United States, a large national study found cosleeping to be more common among African American and Asian American families than among Caucasian

families across all socioeconomic classes. Specifically, African American and Asian infants, regardless of socioeconomic status, were found to be five times more likely than Caucasian infants to sleep in the parental bed (Willinger et al., 2003). Lozoff et al. (1996) found cosleeping was common in African American families regardless of their socioeconomic status, but varied in Caucasian families by being less common in families of higher socioeconomic status. According to Willinger et al. (2003), the strongest predictors for cosleeping were being of African American or Asian race or ethnicity.

Several other factors have been found to be correlated with cosleeping. For example, in Latino families in the United States, cosleeping is more common among families in which the child is the first-born (Owens, 2004). Also, cosleeping is seen as more common in Caucasian families with increased stress levels (Weimer et al., 2002). In England, cosleeping is more common among smaller families (Ball, 2007). Cosleeping in England and Thailand has been found to be more prevalent among mothers of older age (Anuntaseree et al., 2008; Ball, 2007).

In conclusion, the demographics of cosleeping differ depending on region and by ethnicity. In the United States, cosleeping is more common among families with higher levels of stress, lower parental education levels, and lower socioeconomic status. In some other regions, such as England and Thailand, cosleeping is more common among families with higher socioeconomic status, higher parental education levels, and older parents.

Cross-Cultural Theories of Cosleeping

As stated previously, cosleeping follows cultural trends and is seen as a common practice among many different cultural groups. This portion of the dissertation reviews literature regarding the patterns of cosleeping of different cultures. In addition, the intellectual reasoning for cosleeping from differing cultures is reviewed in this section.

According to Jenni and O'Connor (2005), "how we sleep, with whom we sleep, and where we sleep are molded by culture and customs" (p. 206). While it is common in the United States for a child to have a private bedroom or nursery, this practice is considered an exception to the rule when examined on a worldwide scale (Jenni & O'Connor, 2005). While some trends in these cultural differences are made clear by the literature, others become clouded as conflicted data and opinions emerge. One study reported that any countries that practice solitary-sleeping are both Westernized and industrialized (McKenna & McDade, 2005). However, there is direct evidence conflicting with this report when one takes into account Eastern, industrialized countries that chose to cosleep, such as Japan. Additionally, it has been noted that communities who practice cosleeping are highly varied, including both highly technological and less technological communities (Morelli, Rogoff, Oppenheim, & Goldsmith, 1992).

One study in the United States examined advice offered in parenting books regarding sleeping positions for infants. The study found that 28% of the books endorsed cosleeping, 32% took no position, and 40% opposed it (Ramos & Youngclarke, 2006). Ferber (1985) warned, "if you find that you actually prefer to sleep with your infant you should consider your own feelings very carefully" (p. 39). This implies that there is something fundamentally wrong with the desire to cosleep. However, McKenna and McDade (2005) argued that perhaps one should be saying "if you actually prefer to place your infant in a different room to sleep, you should consider your own feelings very carefully" (p. 137). Each writer offers possible perceptions behind cosleeping; however, they each write from vastly different viewpoints. The literature regarding the culture behind cosleeping is passionately written because it is based on strongly-held beliefs regarding parenting and the potential implications that infant sleep positions have on the future of the child.

Cosleeping is not merely a method of sleeping, but a cultural value. In several countries, cosleeping is regarded not only as common practice, but also as necessary for a healthy bonding experience offering the opportunity for the child to experience warmth, protection, and a sense of well-being. The competing ideologies revolve around differing perceptions of what is best for the infant. Generally, this competition can best be related to 'individualist' versus 'collectivist' cultures. For example, Japan and the United States are highly industrialized, modern countries. The deep cultural differences between these countries shape how children customarily sleep. Japan focuses on interdependence and promotes cosleeping, whereas the United States aims for independence and frowns upon cosleeping (Jenni & O'Connor, 2005). These cultural emphases have been said to be the driving force behind deciphering sleeping arrangements for infants. Additionally, Japanese and American parents have different perceptions of the growth and development of infants. In Japan, an infant is viewed upon birth as a separate biological entity who needs to be interwoven into the collectivist culture. In America, infants are perceived as dependent organisms at birth, in need of individuation experiences in order to become independent (Jenni & O'Connor, 2005).

It is true that for many Asian cultures, the parenting emphasis is on building mutual dependence rather than independence (Owens, 2004). The society of Bali shares similarly strong ideas about cosleeping with Japan. In Bali, infants are generally held at all times, day or night. For a person of any age, sleeping alone is regarded as extremely undesirable due to the cultural belief that when sleeping alone one becomes vulnerable to spiritual risks, such as "soul loss" (Jenni & O'Connor, 2005, p. 209).

Central American cultures also have beliefs about infant sleep. Reportedly, the Mayan communities in Guatemala have a similar cultural practice to Asian cultures. They believe that

sleeping alone is an undesired hardship for children or adults of any age (Milan, Snow, & Belay, 2007). The Mayan culture believes cosleeping aids in desirable socialization goals and may be necessary for infant survival. It should be noted that a middle class American baby does not experience the same risks or dangers that a Mayan baby would, such as malnutrition or illness. Additionally, children are considered to be ill-equipped for any level of separation from their families, particularly from their mothers (Morelli et al., 1992).

Italy offers similar conceptions of cosleeping, often preferring infants to cosleep regardless of the availability of a separate room. Reportedly, Italians perceive the American practice of solitary sleep for infants as unkind (Jenni & O'Connor, 2005). Another example of a modernized, industrial society that advocates for cosleeping is Sweden (Welles-Nystrom, 2005). This is unique because Sweden generally adheres to Western values of independence rather than Eastern values of collectivism. Swedish parents operate under the belief that cosleeping is a good developmental practice for their infants. They believe that if a child prefers the comfort, safety, and security of the parental bed, encouraging cosleeping will help the child become more independent and secure in the future (Welles-Nystrom, 2005). Cosleeping has also been cited as a formative way to encourage the development of interpersonal relationships in some cosleeping communities such as Japan and Italy (Morelli et al., 1992).

Researchers have examined the contrast between Japanese children's sleeping behaviors and those of American children. In a study by Latz, Wolf, and Lozoff (1999), it was found that Japanese children engaged in planned cosleeping with their parents more than 3 nights a week. American children were more likely to participate in reactive cosleeping less than 3 nights a week. The Japanese children did not have any reported sleep problems, while the American children experienced more bedtime struggles, more night wakings, and more overall stressful

sleep problems (Latz et al., 1999). Based on this study, it is possible that the reason for cosleeping (planned vs. reactive) may have an impact on children's nighttime behaviors.

Germany, a country that also values independence and autonomy, also frowns upon cosleeping for the same reasons as the United States. In both countries, the standard form of sleep is solitary. Cosleeping is oftentimes considered dangerous, impractical, and is believed to contribute to bad behaviors later in life. Many citizens of both countries believe that in order to start the child on the road to success, they must begin 'independence training' from a very young age (Milan et al., 2007).

Many American mothers perceive cosleeping as a difficult habit to break and suggest that babies need to be trained to become self-reliant and independent from infancy forward (Morelli et al., 1992). One set of writers report the ability to self-soothe from infancy may be predictive of the child's capacity for self-reliance, good sleep hygiene, and other adult competencies later in life (McKenna & McDade, 2005). Child care experts in the United States encourage parents to allow infants to soothe themselves and reduce the amount of night-feedings and nighttime contact, in order for the child to learn to become autonomous (Godfrey & Kilgore, 1998). Some believe one of the first things an infant is capable of learning is to self-soothe. Babies are often left alone to cry and given the opportunity to learn to comfort themselves, thereby aiding in the development of competency and self-esteem. Some argue that infants who are not provided this opportunity will not be able to perceive themselves as capable beings (Schön & Silvén, 2007). Others state that children who become dependent on a sleeping partner from infancy are more likely to suffer from sleep disorders, including difficulties falling asleep alone and seeking out parental attention after even minor nighttime arousals (Hayes, Roberts, & Stowe, 1996). In general, opinions suggest that parenting behaviors that interfere with a child's ability to self-

soothe throughout the night increase the risk of sleep disturbances in children (Simard, Nielsen, Tremblay, Boivin, & Montplaisir, 2008). In the United States, it is believed children must be separated from their parents at as young of an age as possible in order for healthy psychological development (Morelli et al., 1992).

One group of child rearing experts reiterated the importance of solitary sleep. Stein, Colarusso, McKenna, and Powers (1997) stated that by 2 to 3 months of age, a healthy infant is beginning the separation-individuation process naturally. As an infant ages, he or she begins to crawl, walk, and talk. These abilities aid to promote the independence of the infant, as he or she is able to begin to separate him or herself from the parents both physically and emotionally. Toddlers often display behaviors showing their desire for independence (i.e., running away from their parents, or claiming toys as "mine"). Stein et al. (1997) offered the opinion that cosleeping impedes the natural desire for independence, causing confusion and an unhealthy, exaggerated level of dependence on the parents. When children reach the age of 2, they begin the process of developing their own sexual identity (Stein et al., 1997). Children of this age begin to realize the differences between females and males and how the two sexes interact with one another. Cosleeping may cause confusion and overstimulation by providing the nightly opportunity for a toddler to engage in contact with adult bodies. This may result in bewilderment for these children later in life.

Okami (1995) stated the opinion that cosleeping presents a moral dilemma regarding parental privacy and the risk of children traumatically witnessing adult actions inappropriately. In this researcher's opinion, having children sleep in the parental bed may even amplify Oedipal/Electra conflicts (when a child develops sexual feelings for a parent) and convey messages of seduction to the children (Okami, 1995). Additional opinions suggest that cosleeping also runs the risk of

producing confusion and anxiety in a child, rather than reassurance and relaxation (McKenna & McDade, 2005). Cosleeping may interfere with the continuity of the parental sexual relationship and intimacy. Adding a third person to the bed can possibly result in a distraction and a competition for the attention and affection of one of the sexual partners (Stein et al., 1997). According to Ball et al. (1999), cosleeping may possibly foster dependency, it may be addictive and habit forming, and it may be sexually arousing, overstimulating, and frightening. Cosleeping may even model poor limit setting and unclear boundaries (Ball et al., 1999).

McKenna (1996) stated, in his opinion, "there is far more evidence suggesting negative socioemotional and physiological consequences to infants sleeping socially distant from their parents than evidence suggesting inherent negative effects of increased contact or proximity" (p. 212). Additionally, McKenna (1996) went on to say there are no "scientific" studies in which the benefits of solitary-sleeping are shown. Nine years later this researcher added to his advocacy by stating that sleeping with one's baby is not bad, irresponsible, or criminal. Rather, it is normal and expected of affectionate and healthy parents (McKenna & McDade, 2005).

Simply stated by one of the most influential and controversial parenting experts in the United States, Spock, three main sleeping rules must be followed in order to encourage independent children (1945). First, children should fall asleep in their own bed. Second, children should fall asleep alone, without parental attention or presence. And third, children should not be taken into the parental bed for any reason (Spock, 1945). Spock's writings represent an extreme version of North American sleeping values.

It must be noted there are several authors in the cosleeping literature who find the American concept of solitary-sleeping to be simply "folk wisdom" and not grounded in empirical fact. This concept of solitary-sleeping is sometimes referred to as a moral value that is strongly upheld like

a sacred religious belief even though there is research reporting potential benefits of cosleeping (McKenna & McDade, 2005). To date, no study has specifically shown that if an infant engages in solitary-sleeping habits they will gain independence (McKenna & McDade, 2005). Some believe that forcing children to sleep on their own may result in a failure for children to learn intimacy, resulting in shallow children who become insensitive and learn to maintain distant relationships with others (Okami, 1995). One set of authors question the connection between sleeping alone and independence by noting that during historical periods when independence was most valued in the United States such as during colonial times or the westward movement, children were not likely to sleep alone (Morelli et al., 1992).

An additional viewpoint of this argument revolves around the concept that sleep itself is perceived differently in diverse cultures. Sleep patterns across cultures are not uniform. In the United States, humans often aim to sleep for an uninterrupted eight hour time period at night. In some Asian countries, people awaken during the night to play or eat. Also, some Latino countries commonly practice engaging in long daytime naps (Jenni & O'Connor, 2005). These different sleeping patterns may play a role in the location of an infant while sleeping. In the United States, sleep is perceived as an individual activity that is not associated with social behaviors. In other countries, sleep is sometimes perceived as a social behavior. When sleep is considered a social activity, it is reasonable to conclude that cosleeping is expected and preferred as it shapes an infant's social skills. Cosleeping in this context would therefore be an important foundation to relationship patterns later in life (Worthman & Brown, 2007).

There are groups within cultures that practice ideologies of parenting in support of cosleeping. The ideology of "Natural Parenting" holds that cosleeping is a natural, instinctive way of nurturing a child that is essential to human existence (Mesich, 2005). This group of

people believes that cosleeping is a logical nighttime continuation of skin-to-skin or kangaroo care during the day, which is believed to be essential to the development of the infant's sleep biology and the mother's feeding physiology (Ball, 2003). The mothers in the Natural Parenting culture reported that cosleeping with their infant was optimal because it soothed the infant, reduced the disruptions in parental sleep associated with feedings, reduced parental anxiety revolving around the safety of their infants, and helped to enhance parental feelings of closeness with their infants (Ball, Hooker, & Kelly, 1999). Cosleeping, because of its relationship with breastfeeding, is thought by some to enhance the infant's level of attachment (Tan, 2009). Additionally, cosleeping is theorized to provide a large number of benefits to the infant such as a capacity for trust and intimacy and feelings of security (Okami, Weisner, & Olmstead, 2002).

Anthropological Theories of Cosleeping

A common theme among the literature involves the concept of human ancestry and the history of cosleeping in our species. Proponents of cosleeping advocate that cosleeping is an innate form of sleeping for the human species. Opponents of cosleeping propose that as modern culture has changed and shifted, these classic perceptions of the human species have become outdated. An often-cited argument in defense of cosleeping revolves around the anthropological evidence that cosleeping is a natural phenomenon for our species. It is possible that cosleeping is an instinctive, evolved behavior. Historically, close contact between mothers and infants during the night is documented as consistent across both primate relatives and hominin ancestors (Konner & Super, 1987). There is clear evidence showing that human mothers sleep in a similar position with an infant as female great apes sleep with their small infants. Generally, both species will sleep curled up around their infants, suggesting that cosleeping may have the evolutionary purpose of infant protection and safety (Ball, 2006). Okami et al. (2002) stated that

continuous mother-infant contact during the night is a characteristic of all non-human higher primates. The sleep patterns of infant primates are similar to those of humans in support of the concept that human infants are not ready for a night of unbroken sleep by 4 months as many parenting books suggest. Infants of this age, as seen in primate infants, are physiologically adapted to frequent feedings and close contact with their mothers throughout the night (Ball, 2003).

Additional evidence for the anthropological drive to cosleep comes from examining the patterns of infant primates when left alone in their nest. Mammalian infants left alone generally do not cry nor defecate until their mother returns in order to prevent predators from finding them. Human infants, on the other hand, when left alone will generally cry and/or defecate spontaneously. This behavior may indicate that human infants are not meant to be left alone. Keeping human infants close to their mothers is a safer and more evolutionarily stable option (as cited in McKenna & McDade, 2005).

In contrast, some researchers have brought attention to the concept that perhaps these historical references are no longer applicable. For example, the current risks of cosleeping are in part a result of sleeping on soft, elevated mattresses with warm, comfortable blankets. Humans did not evolve their sleeping habits under such conditions. Primitive humans slept on hard, cold surfaces that would have necessitated keeping infants close by for temperature regulation and safety. Also, it is unknown how frequently or under what conditions infants died when sharing the parental “bed” in the early stages of our evolution (Hunsley & Thoman, 2002). Scragg et al. (1995) suggested that cosleeping has probably outlived its historical usefulness in modern day society.

In conclusion, although several authors have cited the anthropological importance of cosleeping, several others have pointed out that these components may no longer be relevant to modern humans. The potential anthropological reasons to cosleep are not useful in deciding whether an infant should sleep in the adult bed. While it is important to consider the roots of human sleep patterns, these arguments are no longer applicable.

Data-Based Arguments for Cosleeping

Psychologically-Related Positive Impacts

Although there are many cultural opinions regarding the benefits of cosleeping, there are few data-based results in the scientific cosleeping literature related to the potential psychological benefits of cosleeping.

Some potential psychological benefits of cosleeping include less nightmares, increased proximity to mothers, and more psychological health (Baddock, Galland, Bolton, Williams, & Taylor, 2006; Forbes, Folen, & Weiss, 1992; Simard et al., 2008). Cosleeping infants show a lower risk of having bad dreams later in life (Simard et al., 2008). In a longitudinal study of 987 families in Canada, mothers completed sleep behavior surveys when their child was 29 months, 41 months, 50 months, 5 years, and 6 years. Children who coslept at 29 months were less likely to have bad dreams at ages 5 and 6.

Cosleeping infants have been said to experience benefits from increased proximity to their parents. A study was completed in New Zealand in which 40 infants, aged 5-27 weeks, were videotaped sleeping in their own home for one night. Analysis of the videotape revealed that cosleeping infants were looked at or touched by their parents 2.5 times more often than solitary sleeping infants (Baddock et al., 2006). It is unclear what specific benefits this increased parental attention translates into.

Cosleeping children have been found to be more psychologically healthy than solitary sleeping children. A study with a sample population of 86 children (aged 2-13 years old) of military families in the United States had parents complete a 4-page questionnaire (Forbes et al., 1992). The authors concluded that cosleeping children were more likely to have no history of any psychiatric disorders than solitary sleeping children (Forbes et al., 1992).

In conclusion, there are data to support some psychological benefits of cosleeping including less frequent nightmares, increased proximity to parents, more nighttime attention from parents, increased physical touching at night, and better overall psychiatric health for cosleeping infants. However, these data would be more robust if the results were replicated by additional researchers.

Data-Based Arguments against Cosleeping

Infant Death

Sudden Infant Death Syndrome (SIDS) is a rare, unexplained phenomenon which results in the death of infants, usually during sleep. There is some confusion in the literature regarding the difference between SIDS and other explained or unexplained deaths (i.e., suffocation, entrapment, etc.). This other type of infant death is often referred to as Sudden Unexpected Infant Death (SUID; AAP, 2011). Several studies have utilized the term SIDS inappropriately when the researchers were truly focusing on SUID. For example, 25 victims analyzed in one study were found laying face down with their noses and mouths in the bedding (Kemp et al., 2000). Another study looked at four "SIDS" victims deaths: two of the infants were found deceased under a parent, one was found on the floor, and one was found at the bottom of the bed (as cited in Mesich, 2005). These deaths would properly be termed SUID rather than SIDS. Regardless of the term utilized, these deaths occurred during cosleeping and are vivid arguments against cosleeping. The literature is replete with studies proporting to show how cosleeping

actually reduces infant death, particularly due to SIDS. These studies suggest that cultures with a low prevalence of SIDS generally practice cosleeping. For example, in Hong Kong, China, where cosleeping is considered the norm, the rate of SIDS is very low. It occurs in less than 1 child per 1000 live birth, in comparison to 2-3 children per 1000 live births in Western countries (Davies, 1985). Similar trends are true for many Asian countries including Vietnam, Cambodia, and Thailand (as cited in McKenna & McDade, 2005).

Although at first glance these studies appear to show that infant death is low in cosleeping countries, there are other factors that must be taken into account. Researchers have found that these cultures with low SIDS rates also have low rates of maternal smoking, high rates of infants sleeping in the supine position (on his/her back), high rates of breastfeeding, high rates of children being held more often than not while awake, and high rates of maternal responsivity to her infant. In cultures where mothers smoke, children are not breastfed, infants sleep in the prone position (belly down), and children are separated from their parents at an early age (such as for solitary sleep), the rate of SIDS is higher (McKenna, 1996). Studies have also found that high SIDS rates are associated with maternal drinking of alcohol before bed or extreme maternal fatigue (Blair, Fleming, Smith, & Golding, 1999; Scragg, Mitchell, Taylor, & Becroft, 1993). It is possible that these factors account for the differences in SIDS rates across countries, rather than cosleeping rates.

Other correlational support for cosleeping's protective nature in SIDS cases relies on ethnicity data. There is evidence demonstrating that in certain countries the relationship between ethnicity and cosleeping can impact the rate of SIDS. One study noted that when looking at SIDS rates within the United States, the longer a subculture had lived in the United States, the higher their rate of SIDS (as cited in McKenna, 1996). According to McKenna (1996), this finding

implies that more ‘American’ patterns of sleep, such as solitary-sleeping infants, raises the risk of SIDS. This particular study investigated 194 infant deaths across a 7-year time span. The results suggested that the longer an Asian family had been in the United States, the higher their rate of SIDS. However, these results were not statistically significant, and should not be interpreted as fact.

While these findings are enough for some researchers to assert that cosleeping is a preventative measure for SIDS, these factors should each be addressed cautiously with the understanding that they may or may not be solely responsible for impacting rates of SIDS. This would be equivalent to citing any other factor as the main causal factor of SIDS. For example, simply because cultures that breastfeed have lower reported rates of SIDS does not mean that mothers who choose not to breastfeed are causing SIDS. With this type of retrospective data, there are no manipulated variables, and no experiment. Cause and effect cannot be determined. Additionally, the literature that claims cosleeping infants are at a greater danger for SIDS is authored by a handful of the same researchers. This leads to suspicions of researcher bias. The data cited here is only a sample of the vast and robust data on risk-factors associated with cosleeping and SIDS. Unfortunately, correlational data is not sufficient to determine if cosleeping as an independent factor increases the risk of SIDS.

Some researchers have attempted to isolate cosleeping as a variable in this research. Tappin, Ecob, and Brooke (2005) examined the risk factors 123 infant deaths attributed to SIDS in comparison to 263 living infants (control group) in Scotland. These authors found that of the 123 infants who died of SIDS, 40 were found dead in the parental bed. They reported that cosleeping when a child is under age 11 weeks was significantly associated with a greater risk of SIDS (p = .010), even in the case of non-smoking mothers and breastfed infants. Also, Scragg, Stewart,

Mitchell, Ford, and Thompson (1995) completed a study of 78% of all births (1985 infants) in New Zealand over the course of 3 years. These authors found that the highest proportion of infants who died of SIDS were of cosleeping, smoking mothers. Also, they found that 3% of all SIDS deaths occurred in cases of cosleeping, non-smoking mothers. These analyses were able to separate cosleeping as an individual factor and found some evidence suggesting that cosleeping alone is a risk factor for infant death.

The results of these research studies has led the American Academy of Pediatrics (AAP, 1997) to state that there are no grounds to recommend cosleeping as a strategy to reduce SIDS. In 1995, Scragg et al. made the claim that "cosleeping in whatever form caused or necessarily increased the risk of SIDS and should therefore always be advised against" (p. 222). According to Carpenter et al. (2013), as many as 90% of cosleeping SIDS deaths would not have occurred if the child had been sleeping on a separate surface for children under age 3 months. These data were found through the mathematical combination of five large SIDS datasets and included 6,151 participants. The authors reported that it is not worth the risk of losing a baby's life, when such a thing can be easily avoided.

Given these research findings, it seems that cosleeping may have an impact on the prevalence rate of SIDS or SUIDs. There is not sufficient evidence to determine that cosleeping is a protective factor for SIDS. The evidence is sound in that there are particular risk factors that greatly increase the risk of SIDS while cosleeping. Additionally, cosleeping can be dangerous and may increase the possibility of a SUID. While cosleeping has been done safely, and children have survived, it does not seem worth the risk of death.

Sleep Patterns

Several studies in the literature address the impact of cosleeping on sleep patterns for both parents and children. In general, cosleeping children have been found to awaken more frequently during the night and sleep lighter than solitary-sleeping children. Research supports that cosleeping mothers also experience more frequent night-wakings, and less sleep overall (McKenna et al., 1997). Proponents of cosleeping are able to consider these factors to offer theories as to why cosleeping is a positive practice, while opponents present these same factors to discount cosleeping.

Several studies have been conducted to examine the differences in sleep between cosleeping infants and solitary-sleeping infants. There is information suggesting that cosleeping infants tend to sleep lighter with shorter periods of deep sleep than solitary-sleeping infants (Richard, Mosko, & Drummond, 1998). Cosleeping is also associated with a higher frequency of nighttime awakenings for infants (McKenna et al., 1997). One study, including 100 participants (11 of which were cosleepers), indicated that frequent nighttime awakenings do not seem to be correlated to any behavior other than cosleeping (Crowell, Keener, Ginsberg, & Anders, 1987). In an internet based study across 16 countries with 29,287 participants, it was found that cosleeping was associated with not only less quality sleep, but less duration of sleep (Mindell, Sadeh, Kohyama, & How, 2010).

When examined more closely, these nighttime awakenings show an interesting pattern. While cosleeping infants awaken more often throughout the night, their overall time spent awake in the night is similar to that of solitary-sleeping infants. This implies that while the cosleeping infants are awakening more often, these awakenings are briefer in duration than those of solitary-sleeping infants (Mao, Burnham, Goodlin-Jones, Gaylor, & Anders, 2004). Some authors have

theorized that the increase in light sleep in cosleeping children may serve to allow for easier arousal during a life-threatening event, such as suffocation. Infants caught up in the deep stages of sleep may be unable to arouse in times of physical distress. This factor may result in a reduction of the rate of SIDS in cosleeping children (Mao et al., 2004). However, cosleeping has not been proven to be a protective factor for SIDS and interrupted sleep has many negative impacts on infants.

Quality sleep is of immense importance for the developing infant. According to Jenni and O'Connor (2005), the deep stages of sleep offer two main functions. Deep sleep serves restorative purposes for brain metabolism and is used for memory consolidation and learning. Regular cosleeping in the early months of life, in correlation with poor nighttime sleeping patterns, may have a negative impact on neurobehavioral functioning of infants (Hunsley & Thoman, 2002). At any age, fragmented sleep can lead to higher rates of illness, poor cognitive functioning, and potentially long-term negative impact on the development of the central nervous system (Bonnet, 1986).

Cosleeping children generally have higher rates of sleep apnea and disturbed nighttime breathing patterns (Richard, et al., 1998). This result is based on one study including 35 participants and has not since been replicated. An infant's sleep environment has a large impact on the child's health (Willinger et al., 2003). To study this, these researchers surveyed 8,453 parents. Infants who cosleep are more likely to suffer from overheating or may lack temperature regulation skills. These researchers found that cosleeping children are 2.9 times more likely than non-cosleeping infants to sleep underneath two or more bed covers. Furthermore, cosleeping infants were twice as likely to be kept under the covers, regardless of the room temperature across several geographic regions (Willinger et al., 2003).

Sleep disorders, such as difficulty at sleep onset, and daytime behavior problems at school are also more common in preschool aged cosleepers (as cited in Hayes et al., 1996). In one study, based on direct interviews with children, 90% of cosleepers reported nighttime fears, whereas only 15% of solitary-sleepers reported nighttime fears (Cortesi, Giannotti, Sebastiani, Vagnoni, & Marioni, 2008). This study was completed in Italy, and included 376 participants. Cosleeping infants also displayed more sleep-related anxiety on the Children's Sleep Habits Questionnaire (Owens, Spirito, & McGuinn, 2000). These results indicate that cosleeping infants have more difficulty sleeping away from home, have a fear of sleeping alone, have a fear of sleeping in the dark, and require a parent to be present in order to fall asleep.

Research suggests that children who cosleep wake up more, struggle initiating solitary sleep, lack sleep routines, and have more sleep-related issues. In cosleeping families, children are not only more likely to wake up more frequently during the night, they are also more likely to have difficulty falling asleep (Mao et al., 2004). Additionally, cosleeping children often become accustomed to falling asleep with their parents nearby; these children generally have a very difficult time initiating sleep independently (Cortesi et al., 2008). Research has indicated that children who sleep independently tend to have more regular bedtimes and bedtime routines than cosleeping children (Crowell et al., 1987). Generally, parents of cosleeping infants report higher rates of sleep problems, nighttime fears, bedtime resistance, and sleep anxiety than do parents of solitary-sleeping infants (Cortesi et al., 2008).

The research related to the impacts of cosleeping on parents is similar. Mothers who cosleep report a greater number of arousals throughout the night (McKenna et al., 1997). Along the same lines, using polysomnographic technologies, one study found that mothers aroused 30% more

frequently when they were cosleeping (McKenna & McDade, 2005). Thus, the same negative impacts of fragmented sleep that affect infants, likely affect parents.

In summary, cosleeping infants and parents experience more fragmented sleep than solitary-sleeping families due to increased night wakings. Cosleeping may negatively impact an infant's neurological development, stress level, central nervous system development, and immune system. Cosleeping has negative impacts on both the quality and quantity of sleep.

Psychologically-Related Negative Impacts

Over the course of several decades, psychologists have provided several possible reasons as to why cosleeping may have a negative impact on parents and children; however, few of these opinions are backed by concrete research.

Some researchers have attempted to solidify the impacts of cosleeping through gathering empirical data. One set of researchers looked at the psychological impacts of cosleeping on parents. As previously mentioned, Cortesi et al. (2008) conducted an Italian study with 376 participants and found that cosleeping parents reported significantly higher levels of psychological distress and marital maladjustment on the Symptom Checklist-90-Revised (Derogatis, 1977) and the Dyadic Adjustment Scale (Spanier, 1989). Marital distress was reported by 73% of the cosleeping participants and by 43% of the solitary sleeping participants in this study (Cortesi et al., 2008). This same study attempted to look at the psychological impacts of cosleeping on children by having the primary caregiver complete the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). The CBCL was chosen as an appropriate measure of childhood behavioral and emotional problems due to its "good test-retest reliability and adequate interparent reliability" (p. 94). The results indicated that cosleeping children displayed higher rates of emotional and behavioral symptoms than solitary sleeping children,

including on an overall total scale, internalizing scale, and externalizing scale. Additionally, cosleepers scores were higher on the anxiety and depression subscales. While these data indicate potential negative psychological impacts of cosleeping on children, there are many factors in need of consideration. The measure is completed by the primary caregiver who inherently is biased. Also, the authors indicated that the levels of distress did not meet criteria set forth by the authors of the CBCL to be clinically significant symptoms. The CBCL was also not normed on Italian children, thus these results are likely not valid (Cortesi et al., 2008).

In a study by Kelmanson (1999) of 204 infants, infants who slept alone were rated by parents to have the most positive mood compared to cosleeping infants, who were rated to have the most negative mood on the Early Infancy Temperament Questionnaire (Medoff-Cooper, Carey, & McDevitt, 1993). These infants were rated, by their primary caregiver, across nine different aspects of temperament, including activity, rhythmicity, approach, adaptability, intensity, mood, persistence, distractibility, and threshold. These study results are sound, but they should be interpreted with some caution. As with the data from Cortesi et al. (2008), these finding were based on parental impressions of their children. It can be argued that parents are who know their child best. Parents, as a general group, are apt to inflate positive and negative behaviors of their children.

Overall, there are many potential consequences of cosleeping on parents and children. According to the data, although collected by parent report, cosleeping children experience higher symptoms of anxiety, depression, and bad moods. Additionally, the data support that cosleeping parents experience higher rates of marital distress.

Other Factors

Breastfeeding

There is a clear connection in the literature between breastfeeding and cosleeping across all cultures (Ball, 2007). Breastfeeding, in itself, has a plentitude of research supporting its unique nutritional benefits to infants, in addition to increasing mother-infant bonding (Ball, 2007). Researchers of this topic area have found conflicting evidence on the potential benefits of cosleeping in regards to breastfeeding.

Proponents of cosleeping bring to light evidence supporting that cosleeping infants are more likely to breastfed, and at a greater frequency, as opposed to solitary-sleeping infants. Regardless of race, within any given nation, cosleeping is more common when the infant is breastfeeding (as cited in Fu, Colson, Corwin, & Moon, 2008). Some would even say that cosleeping promotes breastfeeding, and the reasoning for this is simple: a mother and an infant sleeping next to each other can engage in breastfeeding with much greater ease (McKenna & McDade, 2005). Cosleeping helps to make breastfeeding feel like less hard work and may encourage mothers to breastfeed for a longer portion of the infant's life (Ball, 2003). Literature also indicates that infants who cosleep breastfeed twice as often as solitary-sleeping infants. The total accumulated time spent nursing each night is three times as long in cosleeping infants than it is in solitary-sleeping infants (McKenna, Mosko, & Richard, 1997). An increase in the frequency of nocturnal breastfeeding can prolong the suppression of maternal ovulation and can aid in the prevention of some cancers (Mesich, 2005).

It is important to note that the data regarding cosleeping and breastfeeding is correlational, rather than causational. It is yet unclear whether cosleeping promotes breastfeeding or breastfeeding promotes cosleeping (McCoy et al., 2004). Although these two practices occur

together in some households, in some populations no evidence has been shown to associate bed sharing with the initiation of breastfeeding or concurrent breastfeeding and cosleeping (Brenner et al., 2003). The most recent research on this topic indicates there is an increased risk of death associated with cosleeping, even if the infant is breastfeeding (Carpenter et al., 2013). The risk of a cosleeping breastfeeding infant (under the age of 3 months) dying suddenly is reportedly 5.1 times greater than a solitary sleeping infant. Additionally, a recent study in the Netherlands found that while their country's rates of cosleeping decreased, the rate of breastfeeding actually increased (as cited in Carpenter et al., 2013).

In conclusion, research has shown that cosleeping infants can have higher rates of breastfeeding. There are clear benefits of breastfeeding for both mothers and infants (Ball, 2007). However, research also suggests that solitary sleeping infants can be breastfed and sleep more safely. The potentially beneficial impact that cosleeping has on breastfeeding rates does not outweigh the possible risks associated with cosleeping, such as SIDS or accidental deaths (Wailoo, Ball, Fleming, & Platt, 2004). According to Ruys, de Jonge, Brand, Engleberts, and Semmekrot (2007), the risks caused by cosleeping are not significantly impacted by the presence or absence of breastfeeding.

Transitional Objects

The literature indicates that there are differences in the usage of transitional objects between children who cosleep and solitary-sleeping children. A transitional object is the term used to refer to a "security blanket," a stuffed animal, or another object that the child uses to self-soothe. The literature implies that there are differing opinions regarding the use of these objects.

As John Bowlby predicted in 1969, children who spend the majority of their day in close contact with their parents are less likely to engage in the use of a transitional object (Green,

Groves, & Tegano, 2004). Research has indicated that solitary-sleeping infants were significantly more likely than cosleepers to use a transitional object at bedtime (Hayes et al., 1996; Green et al., 2004).

Multiple psychoanalysts would argue that using a transitional object is normal and is associated with healthy child development (Green et al., 2004). Based on a study with 275 participants, research suggests that children who do not use a transitional object are more likely to be institutionalized or suffer from a form of psychopathology than children who do (Green et al., 2004). These researchers claim that the use of transitional objects serves as an adaptation made by the infant to comfort him or herself during stress (Green et al., 2004).

In conclusion, the research supports that cosleeping children use transitional objects less often than solitary-sleeping infants. In the American culture, the use of a transitional object can be considered a healthy way for an infant to find comfort in the absence of their parent and may have positive psychological effects. If transitional object use if important in a parent's culture, this may be an important factor to consider in the decision to cosleep or not.

Long-Term Impacts

Despite the plethora of research in the area, the question of whether to cosleep or not remains unanswered. Some researchers have attempted to answer this question by addressing the long-term impact that cosleeping has on children. Studying the long-term implications of cosleeping has been seemingly overlooked by most researchers. However, two such studies are presented here (Lewis & Janda, 1988; Okami et al., 2002). The research found long-term implications regarding sexual identity and comfort, self-esteem, and cognitive competency.

The first study to look at long-term impacts was conducted by Lewis and Janda (1988). These authors surveyed 210 undergraduate students who coslept as children and found that they

were more satisfied with their sexual identities. These students were asked to complete an extensive survey regarding their experiences during childhood related to cosleeping, exposure to parental nudity, and perceived parental comfort level towards sexuality. Additionally, the subjects were asked to answer questions related to their current relationships and sexual comfort. As stated above, the results indicated that children whom coslept reported higher levels sexual comfort (Lewis & Janda, 1988).

This empirical study carries with it several limitations. First, the research is currently over 20 years old. Secondly, the participants were college students asked to fill out a retrospective survey about their sleeping habits as children. It is possible that their memories from infancy are not as vivid as the researchers would hope. This limitation also means that the results are not generalizable to a population beyond those in this study. Additionally, although the researchers found significant relationships, the relationships were still modest (all had a correlation level of less than $p = 0.30$). Another limitation is that the students completed the survey in a large group setting. It is possible college age students would have a difficult time being honest on a sex-related survey, due to potential for embarrassability (Lewis & Janda, 1988).

A second study was presented by Okami et al. in 2002. These authors conducted an 18-year longitudinal study examining the long term effects of cosleeping in the United States. The authors followed 205 families from 1975 to 1993. One child from each family was followed from birth through age 18. Throughout this period the researchers engaged in and drew information from home observations; child assessments, such as the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974) and the Lambert Pupil Behavior Rating Scale (Lambert & Nicoll, 1977); school grades; and parent and child interviews and questionnaires. At age 6, the children who were cosleeping were found to have significantly higher cognitive

competency than solitary-sleeping children. At age 18, the study did not indicate any significant positive or negative long term effects of cosleeping. These authors concluded that there is no evidence to support the concept that cosleeping has detrimental or positive effects on children.

This study comes with unique limitations as well. For example, the authors noted that they did not utilize accurate nor detailed measures of cosleeping. Their cosleeping measures failed to take into account frequency, duration, or proximity. The authors also stated that although significant results were found when the children were aged 6, their effect sizes were small. The largest correlation in this study was $r = 0.15$ (Okami et al., 2002).

In conclusion, it is not clear whether there are long-term psychological effects of cosleeping, nor whether these effects are positive or negative. It is clear that the available data cannot affirm long-term impacts of cosleeping; thus, the decision to cosleep or not should not be based on the potential long-term impacts. According to the research, where an infant sleeps does not seem to have impacts on adult life.

Medical Recommendations

This portion of the dissertation reviews the official recommendations made by pediatricians and midwives in the United States regarding cosleeping. First, information regarding pediatric recommendations and research completed in this area is summarized. This is followed by the recommendations from the midwifery community and research from this area.

Pediatric Recommendations and Research

In 2000, the American Academy of Pediatrics (AAP) concluded that there was not enough data to provide a definitive recommendation on cosleeping. Five years later, the AAP recommended against cosleeping due to its association with higher rates of SIDS (AAP, 2005).

In the AAP's most recent technical report on SIDS the task force provided several guidelines related to cosleeping (AAP, 2011). These guidelines are as follows:

1. Room-sharing without bed-sharing is recommended.
2. There is insufficient evidence to recommend any bed-sharing situation in the hospital or at home as safe and devices promoted to make bed-sharing safe are not recommended.
3. There are specific circumstances in which bed-sharing is particularly hazardous, and it should be stressed to parents to avoid these situations at all times.
4. Infants may be brought into the bed for feeding or comforting but should be returned to their own crib or bassinet when the parent is ready to return to sleep.
5. It is prudent to provide separate sleep areas and avoid cobedding for twins and higher-order multiples in the hospital and at home.

Research has yet to be completed on the use of cosleeping recommendations of physicians.

Midwifery Recommendations and Research

In 2005, Paeglis presented the results from a national audit of cosleeping completed by the Royal College of Midwives in the United Kingdom. According to this report, midwives have traditionally supported the practice of cosleeping as beneficial. The Royal College of Midwives (RCM; 2005) has avoided making a recommendation on cosleeping. Rather, with the acknowledgement that some parents will choose to cosleep, they encourage midwives to offer information regarding safe cosleeping. Specifically, the RCM stated:

> "The RCM position remains one of facilitating women's informed choices in maternity and child care and believes that all women and their partners should be informed of the benefits and contra-indications of bed sharing to enable them to make informed choices and decisions about cosleeping or bed sharing with their babies. Further, the RCM believes that in ensuring the safety of babies, it is crucial to respect and support cultural norms and practices." (p. 25)

The researcher mailed surveys to several maternity units in England, Scotland and Wales in order to gauge the use of cosleeping guidelines and eighty-one were received. Returned surveys resulted in several interesting findings. The research showed that 58.8% of the eighty-one units supported cosleeping in the hospital and at home, 32.3% supported cosleeping only at home, and 9.2% were unsupportive of cosleeping. Nearly 93% of the units reported that their midwives provide safety information regarding cosleeping. Similar studies have not yet been conducted in the United States of America. Additionally, the nationwide American midwifery associations do not clearly state their positions on cosleeping.

Alternative Recommendations

A large nonprofit organization, La Leche League International (2008), encouraged cosleeping because they perceive it as safe and beneficial for the infant. The Consumer Product Safety Commission recommended that children under the age of 2 years old should sleep alone in cribs that are federally approved (as cited in Hunsley & Thoman, 2002). In 1999, Ann Brown, the commissioner of the Consumer Product Safety Commission advised parents to not sleep with their baby and to not put the baby down to sleep in an adult bed (as cited in McKenna & McDade, 2005). The consensus of these recommendations is that cosleeping is not a safe form of sleeping for infants in the United States.

It should also be noted that cosleeping recommendations vary by location. For example, according to Carpenter et al. (2013), in some countries cosleeping is not recommended at any age by some agencies (United States of America, New Zealand). In other countries, cosleeping is not recommended under the age of 3 months (the Netherlands). Yet other countries, like the United Kingdom and Australia, only condone cosleeping if other risk factors are not present (smoking parents, obesity, etc.) Different factors go into these types of recommendations.

Conclusions

The recommendations regarding cosleeping are varied across and within professions. Some research suggests that physicians can influence parents' infant care behaviors because they are viewed as experts (Lewis, DeVellis, & Sheath, 2002). Research also suggests that medical advice regarding cosleeping is not always followed by parents. Chianese, Ploof, Trovato, and Chang (2009) conducted focus groups at an inner-city primary care center in Pittsburgh, Pennsylvania to address this issue. A total of 28 parents participated. The discussions were audiotaped, transcribed, and coded by multiple investigators. The researchers found that parents believed physicians had an obligation to recommend against cosleeping, but that this advice did not influence their decisions to cosleep or not. Parents relied more on their own beliefs of infant safety over those of their doctor. Morgan and Johnson (2001) found similar results in their study of resident recommendations. They found that nearly all the physicians reported advising against cosleeping, but that roughly one-third of parents continued to cosleep regardless.

Hypotheses

It was hypothesized that Midwives would recommend cosleeping at higher rates than OB/GYNs. This result was hypothesized because midwives generally endorse natural parenting or attachment parenting, parenting styles that encourage cosleeping. Also, it was hypothesized that Midwives would recommend cosleeping through older ages than OB/GYNs. In natural parenting and attachment parenting cultures, children are sometimes encouraged to cosleep into later years of life.

Methods

Participants

The participants for this study include persons who self-identify as one of two infant delivery aides: an OBGYN or a Midwife. The only demographic limitation was that participants must

identify as 18 years of age or older. Participants were recruited exclusively through the use of electronic communications including email and social media websites (such as Facebook). Email information for these professionals was readily accessible on the internet. Using a free downloadable calculator called G*Power (Faul, Erdfelder, Buchner, & Lang, 2009), an a priori power analysis was conducted in order to learn the appropriate sample size needed to obtain a 'medium' effect size of 0.3 (Cohen, 1988). A medium effect size was chosen because, generally speaking, it indicates the approximate average size of the observed effect. A medium effect size indicates the degree to which the null hypothesis is false. Additionally, it indicates an effect that can be observed by the naked eye (Cohen, 1992). For this dissertation, a medium effect size was chosen because it represents an attainable, yet respectable, value. In order to achieve a medium effect size (w) of 0.3, a sample size of roughly 263 participants is needed. This is based off of the inserted values set as follows: alpha was set at 0.05, power was set at 0.95, and degrees of freedom set at 9 (because this is a 2 x 10 analysis and df = (# of *Rows* – 1)(# of *Columns* – 1)).

Over 530 professionals were contacted via email to participate in this research. Some were contacted through direct email, while others were contacted through group practice emails or online forms. Of these contacted professionals, 100 were identified as Midwives and 430 as OB/GYNs. More OB/GYNs were contacted than Midwives due to the difference in response rate. During data collection, after the initial contact phase, a secondary stage of contacts began focused solely on gathering more completed surveys from OB/GYNs. Of the 530 professionals contacted, 223 began the survey; however, 85 of these participants did not complete the survey. Of the 138 completed surveys, an additional 10 were removed from the sample because the participants identified location of practice was outside of the United States of America. In sum, the participants for this study included 128 total persons. Of the 128 who completed the survey,

45 identified as OB/GYNs and 83 as Midwives. This means 83% of contacted Midwives completed the survey, whereas, 10.5% of OB/GYNs contacted completed the survey. The participants endorsed conducting their practice across 27 different states in the United States of America. The states of Oregon, California, Washington, Texas, and Iowa represented 59.3% of the sample. The sample consisted of 117 female practitioners and 11 male practitioners. The sample represents an age range from 23 to 63, with a mean age of 43.5 years old. Also, the participants identified as 89.1% Caucasian, 7% "more than one race", 1.6% Asian-American, .8% African-American, .8% Native American/Alaska Native, and .8% Other.

Instruments

The measure for this study was created by the principal investigator, as no other similar measures exist, and included several pieces of information. First, demographic data was collected, including the participants profession, location of practice, age, gender, and ethnicity. These data were collected in order to better understand the sample. Second, the participants answered closed-ended questions regarding their recommendations for cosleeping at various ages and their reasoning behind these recommendations. These age periods are the same as those identified by Piaget (1964) and are considered to be good reflections of cognitive growth and change in infants and children. Through a survey given to breastfeeding mothers in England, it was found that 70% of breastfeeding infants engaged in some form of cosleeping in their first month of life (Ball, 2007). At 6 months of age, 44% continued to cosleep. In Italy, 7% of children aged 8 to 10 were found to cosleep (Cortesi et al., 2004). This suggests that cosleeping patterns may change in relation to a child's age. This survey took the participants an estimated time of 10-15 minutes to complete (see Appendix).

Procedure

A formal proposal to Pacific University's Institutional Review Board (IRB) was submitted including a detailed description of the data collection process. After approval, data collection began following all requirements of the IRB. Data were collected online through the use of an internet survey website, Survey Monkey. As previously stated, participants were recruited through email and social media websites. Participants were required to agree to exclusionary criteria and informed consent prior to continuing the survey. Participants indicated they had read, and agreed to, the informed consent by electronic affirmation. Participants then completed the demographics questionnaire and the cosleeping recommendations survey. Efforts were made to keep data confidential and secure through the use of password protected files and de-identified data sets. Only the principal investigator had access to these data. Additionally, participants were not asked for identifying information, such as their names or contact information. The researcher did have knowledge of the participants' email addresses from the initial contact but was not able to link the email addresses with the survey responses. After the data collection phase, the data were analyzed using SPSS, version 21.0, a statistical calculation program (IBM Corp., 2012).

Data Analysis

The participants were divided into two groups based on their identified profession. Each participant's endorsement of cosleeping was assessed at ten different age periods. This was a series of 10, 2 x 2 chi-square ($\chi 2$) tests of independent analysis.

The Chi square test of independence is a nonparametric statistic which can persevere through odd and irregular data sets. This means the data used can be irregular (not normally distributed) and the sample is not always required to be random. The assumption of independence is important for this type of test. It is necessary to know that the observed sample data are not influenced by one

another, meaning the results from one group do not change the results of another group. In this dissertation, the samples from the OB/GYN participants and the Midwife participants are independent of each other and did not influence the results. Nonparametric tests are generally best used for nominal and ordinal measurement values, such as those used in this analysis (i.e., yes/no). Nonparametric tests are considered robust, but they are not as powerful as parametric tests (Siegal, 1956). The Chi-square test of independence is used when there are two categorical variables, each with at least two levels, and it permits the researcher to determine whether the data fall into the categories in proportions equal to those expected by chance. This test is conducted by comparing the observed cell frequencies (those collected in the data) to the expected cell frequencies (equal variances between cells). The analysis addresses the question of whether the observed values are significantly different than there being no differences in the cells (Urdan, 2005). This test uses a contingency table in order to aid in the statistical understanding. In this study, 10 two-by-two contingency tables were used in order to analyze the results for each possible age group.

Results

This experiment had two main hypotheses. The first hypothesis was that Midwives would recommend cosleeping at higher rates than OB/GYNs. In order to assess this the rate at which Midwives recommended cosleeping was compared to the rates of recommendations for OB/GYNs at every age group. A two-way contingency table analysis was conducted. The two variables were occupational status (OB/GYN and Midwife) and recommendation (Yes or No). See Table 1 for the results of this analysis.

Table 1

Correlations, Significance, Effect Size, and Endorsement Rates Across Age Ranges

Age Range	Percentage of OB/GYNs	Percentage of Midwives	Pearson's $\chi 2$	Significance (*p*)	Effect Size (Φ)
0-6 weeks	26.7%	94%	63.33	.000*	.70
6 weeks – 4 months	31.1%	92.8%	53.98	.000*	.65
4-8 months	35.6%	92.8%	48.08	.000*	.61
8-12 months	33.3%	88%	40.52	.000*	.56
12-18 months	31.3%	83.1%	34.64	.000*	.52
18-24 months	31.1%	80.7%	30.91	.000*	.49
2-4 years	22.2%	68.7%	25.24	.000*	.44
4-7 years	13.3%	53%	19.30	.000*	.39
7-11 years	6.7%	42.2%	17.62	.000*	.37
11 + years	4.4%	27.7%	10.05	.002*	.28

*Note: * indicates $p < .05$, statistical significance*

Also, it was hypothesized that Midwives would recommend cosleeping through older ages than OB/GYNs. While both professions recommended cosleeping less as the age of the child increased, midwives continued to recommend cosleeping at a higher rate than OB/GYNs. For a child of 11 years of age or older, midwives in this sample were 6 times more likely to recommend cosleeping.

Please see Figure 1.

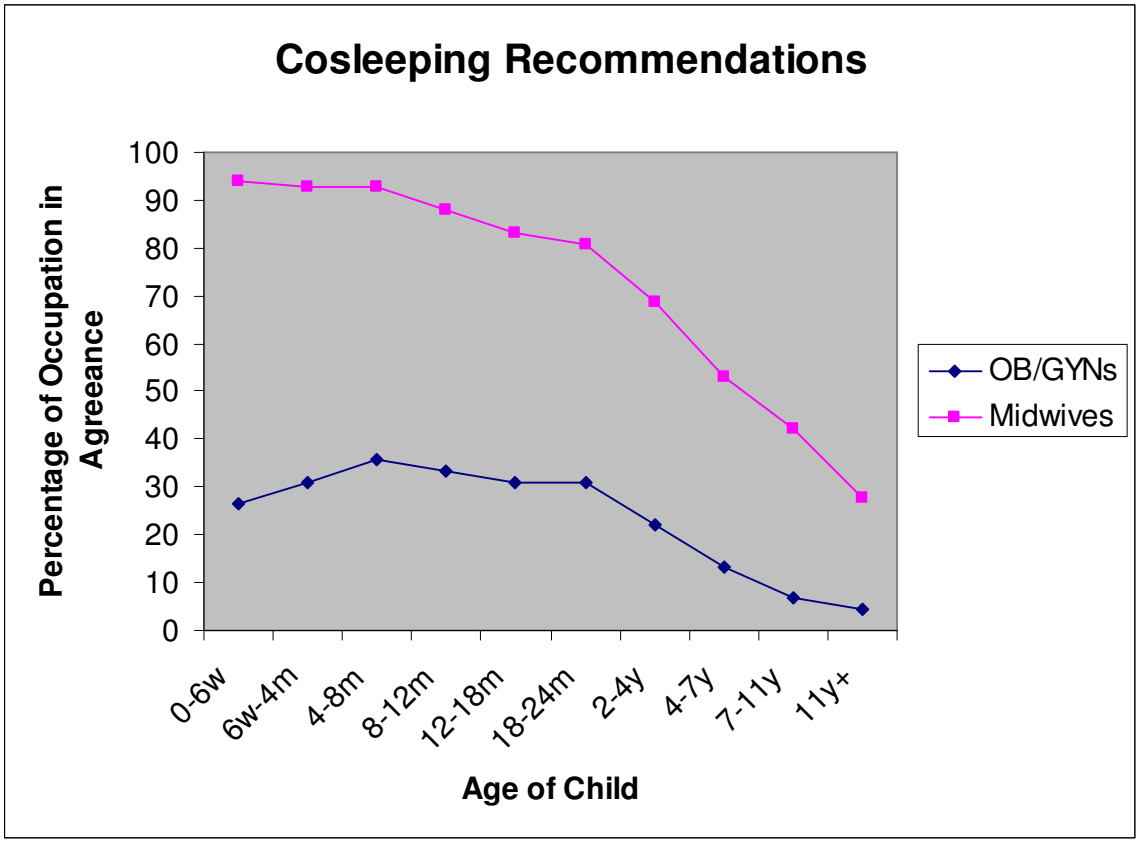

Figure 1. Change in recommendations as age of child increases, by occupation.

Discussion

Implications

Based on the statistical results of this study, both hypotheses have been confirmed. Midwives endorsed cosleeping at significantly higher rates than OB/GYNs, across age groups. This means there is a higher likelihood than chance alone that these two birthing professions are giving different advice to parents about sleeping arrangements for their families. As the age of the child increased, both professions endorsed cosleeping less. Additionally, the difference between the rates of endorsement became smaller as the opinions of the two occupations grew more similar. The effect sizes of these statistically significant differences also aid in confirming these

hypotheses. From ages 0 to 8 months, a large effect size was found. This indicates a strong weight in this difference of opinion. It is very unlikely that the results found are based on chance. As age increased, effect size grew smaller. From ages 8 months to 4 years old, the effect size was medium and from ages 4 years to 11 plus years, the effect size was small.

There has been no past literature studying the cosleeping recommendations of OB/GYNs. In concordance with the recommendations of the American Academy of Pediatrics (2005), the majority of OB/GYNs in this study recommended against cosleeping. This finding is also in agreeance with the Consumer Product Safety Commission, which states children under age 2 should sleep alone (as cited in Hunsley & Thoman, 2002).

Past literature regarding the cosleeping recommendations of midwives has been sparse. As previously discussed, a study was completed in the United Kingdom, in which it was found that 32.3% of participating midwives supported cosleeping for infants in the home (Paeglis, 2005). Overall, there are no nationwide cosleeping recommendations within the midwifery profession. The results of this dissertation indicate higher rates of midwives recommending cosleeping than those previously noted in the UK. For young infants, ages 0-6 weeks old, 94% of the midwives in this study endorsed cosleeping.

Research is conflicting on how much weight the recommendations of birthing professionals carry in the decisions of parents. According to some past literature, parents are inclined to do what feels right for their family without regard for recommendations (Chianese et al., 2009; Morgan & Johnson, 2001). Other literature indicates that medical professionals do have an influence on parents' infant care (Lewis et al., 2002). Regardless, it may be confusing to parents to hear conflicting advice from qualified medical professionals. The results of this study indicate

that parents who consult with multiple professionals may get different recommendations for how their baby should sleep. This would likely result in confusion for families.

The benefits and consequences of cosleeping have been examined by many different researchers and the results have been conflicting. There are some potentially beneficial reasons to cosleep. In truth, overall, the consequence of potential death of an infant is of utmost importance. According to the most recent research on this topic as many as 90% of cosleeping SIDS deaths would not have occurred if the child had been sleeping on a separate surface (Carpenter et al., 2013). Medical professionals should at least be offering facts about cosleeping and safety tips to families so they can make the most informed decision for their family.

Limitations

This study included many limitations. First, there were small and unequal sample sizes. Gaining participants, particularly physicians, was very difficult. While many OB/GYNs made their email information available online, some OB/GYN websites provided phone numbers only. This means that the primary investigator was limited to those who did publish email information, which generally included those in small practices or those in academic settings. Additionally, it was noticed that OB/GYNs were overall less likely to complete the survey, perhaps due to the nature of the intensity of their workload. Also, the data collection period was time-limited due to the need to complete this type of research during the course of a graduate education. If more time and resources were available to the primary researcher, it is possible a more robust sample could have been collected. Future investigators should aim to increase the number of participants. One way to do this might include working with hospitals to conduct this type of survey in person, or perhaps having the funds to conduct the survey via direct mail.

The survey itself was created for the purpose of collecting data for this individual survey. It lacks concrete reliability and validity. As previously stated, the language and the scope of the survey could use refinement in future explorations of this topic. A few participants emailed the primary investigator about the language used in the survey. One participant noted that he or she didn't make "recommendations" for sleep; rather, they supported the desired sleep habits of the family. Also, participants noted that as birthing professionals, they do not typically make recommendations for children above age one. Thus, the scope of the survey was beyond the scope of their practice.

This study is also limited by the nearly homogenous demographics of the participants. Future investigators should aim to include a more ethnically diverse sample, in addition to including more male participants. The perspectives of Developmental Pediatricians, Primary Care Physicians, and Family Practitioners would add to this literature, particularly for views on cosleeping as children age.

Future Directions

There are many potential directions the cosleeping literature should continue to expand. A top priority of researchers should be to continue to attempt to prevent infant deaths by expanding on the literature regarding risk-factors for SIDS. Additionally, more concrete findings of the benefits and consequences of cosleeping in regards to rates of breastfeeding, impact on sleep quality, attachment, and other psychologically related influences are needed. In order for birthing professionals to offer sound advice, first they would need more concrete findings in the literature.

In specific relation to the recommendations of medical professionals and similar studies to this one, future researchers should aim towards a more robust sample size. Finding a larger sample would be important to solidify the findings of this research. Also, a sample that includes

a more diverse perspective would add to the literature. Studies completed using an international sample would provide a worldwide perspective on this clearly culturally driven issue. Future samples, if looking at recommendations for children above the age of 6 months, should include Developmental Pediatricians, Primary Care Physicians, Family Practitioners, and possibly Child Psychologists. These professionals may be more qualified and more comfortable offering sleep recommendations past the age of 6 months.

Lastly, future researchers may want to explore this issue further by understanding the reasons why these professions are endorsing cosleeping at different rates. An understanding of the reasoning behind these recommendations would help researchers gain clarity into the divide between these professionals. With more research, a clearer understanding of the appropriate way for children to sleep may be gained and medical professionals will find offering these types of recommendations easier.

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Appendix

Survey:

Part 1: Demographics

1) What is your profession?
    a. OB/GYN
    b. Midwife
2) Where do you practice this profession?
    a. [enter state]
3) What is your age?
    a. [enter age]
4) What is your gender?
    a. Female
    b. Male
    c. Other
5) What is your ethnicity?
    a. African-American
    b. Asian-American
    c. Latino/Hispanic
    d. Native Hawaiian/Pacific Islander
    e. Native American/Alaska Native
    f. Caucasian
    g. Biracial
    h. Other

Part 2: Survey
Note: For the purposes of this survey, cosleeping is defined as a parent and child sleeping on the same surface within arms reach.

1) Would you recommend cosleeping to a parent with a child at the following ages:
    a. 0-6 weeks old
        i. Yes
        ii. No

    Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep

Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

b. 6 weeks-4 months old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

c. 4 months – 8 months old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

d. 8 months – 12 months old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:
If yes:
- Cosleeping facilitates breastfeeding
- Cosleeping enhances attachment
- Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
- Cosleeping is natural and instinctive
- Cosleeping is normal around the world
- Other (please specify)

If no:
- Cosleeping is dangerous
- Cosleeping children experience fragmented sleep
- Cosleeping prevents children from gaining the ability to self-soothe
- Cosleeping is immoral
- Cosleeping increases marital distress
- Other (please specify)

e. 12 months – 18 months old
   i. Yes
   ii. No

Why would you make this recommendation? Please check all that apply:
If yes:
- Cosleeping facilitates breastfeeding
- Cosleeping enhances attachment
- Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
- Cosleeping is natural and instinctive
- Cosleeping is normal around the world
- Other (please specify)

If no:
- Cosleeping is dangerous
- Cosleeping children experience fragmented sleep
- Cosleeping prevents children from gaining the ability to self-soothe
- Cosleeping is immoral
- Cosleeping increases marital distress
- Other (please specify)

f. 18 months – 24 months old
   i. Yes
   ii. No

Why would you make this recommendation? Please check all that apply:
If yes:
- Cosleeping facilitates breastfeeding
- Cosleeping enhances attachment
- Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
- Cosleeping is natural and instinctive
- Cosleeping is normal around the world
- Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

g. 2 years – 4 years old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

h. 4 years – 7 years old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

i. 7 years – 11 years old
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)

j. 11 years and older
    i. Yes
    ii. No

Why would you make this recommendation? Please check all that apply:

If yes:

Cosleeping facilitates breastfeeding
Cosleeping enhances attachment
Cosleeping reduces the rate of SIDS (Sudden Infant Death Syndrome)
Cosleeping is natural and instinctive
Cosleeping is normal around the world
Other (please specify)

If no:

Cosleeping is dangerous
Cosleeping children experience fragmented sleep
Cosleeping prevents children from gaining the ability to self-soothe
Cosleeping is immoral
Cosleeping increases marital distress
Other (please specify)